

---

## Overview

This standard is about shaping pipework components by material removal using hand tools in engineering construction.

You will need to be able to shape pipework materials using the appropriate materials and techniques and check that the specification has been met whilst adhering to health, safety and environmental legislation, regulations and safe working practices.

In the context of this standard, your responsibility is to interpret and work within given specifications, selecting techniques and making variations to achieve the best possible result. In some cases, you may still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.

### **Who this standard is for**

This standard is for Pipefitters.

---

## Performance criteria

*You must be able to:*

1. work safely at all times, comply with health and safety and other relevant legislation, regulations, guidelines and local rules or procedures
2. ensure that the work environment, materials, tools and equipment are suitably prepared for the work activities to be undertaken
3. obtain the required materials and check the dimensions, quantity and quality, as required
4. obtain and follow the relevant engineering drawings, specifications and quality standards
5. shape the pipework materials using appropriate hand tools and techniques
6. identify and rectify pipework defects, where appropriate
7. check that the shaped pipework components meet the required specification, then follow the required handover procedures
8. reinstate the work area
9. deal promptly and effectively with problems within your control and report those that have been and those that cannot be solved

## Knowledge and understanding

*You need to know and understand:*

1. relevant legislative, regulatory and local requirements or procedures and safe working practices including your responsibilities with regard to reporting lines and procedures
2. preparation and reinstatement requirements in respect of the work area, material, tools and equipment and the possible consequences of incorrect actions in these areas
3. relevant engineering drawings, related specifications and quality standards
4. methods and techniques of shaping by material removal using hand tools:
  1. which tools to use and when
  2. how to sequence the stages of work
  3. how to modify the way of working to meet particular needs
5. how to check compliance with the specification for the:
  1. material to be shaped
  2. completed pipework components
6. types of defect that might be found, how to identify them and what to do if any are found
7. tool and equipment control: the correct use of relevant tools and equipment and your individual responsibility for the use, care and security of those you use

---

## Scope/range

### Work environment

Typical work environments could include:

- Engineering construction sites
- Controlled operations
- Offshore installations
- Maintenance sites
- Nuclear sites
- Repair sites

Work environments may be open or restricted spaces:

- At height
- Confined spaces
- Control rooms
- Controlled operational and offshore installations
- Designated work areas
- Explosive atmospheres
- Existing plants and structures
- Fabrication workshops
- In plant rooms
- Inside structures, system and plant
- On access structures (scaffold)
- On open structures
- Onshore and offshore installations
- Shafts
- Shipyards
- Tunnels

---

\*\*

Reinstate the work area

This term could include:

- returning the work area to a safe condition
- removing barriers
- sweeping up
- correctly disposing of waste materials
- storing re-usable materials, consumables and equipment in accordance with appropriate procedures
- completing all necessary documentation

<b>Developed by</b>	ECITB
<b>Version Number</b>	2
<b>Date Approved</b>	14 Dec 2020
<b>Indicative Review Date</b>	14 Dec 2024
<b>Validity</b>	Current
<b>Status</b>	Original
<b>Originating Organisation</b>	Engineering Construction Industry Training Board
<b>Original URN</b>	NIPSMECH1ECSR5.08
<b>Relevant Occupations</b>	Pipe Fitter, Pipefitter
<b>Suite</b>	Installing Plant and Systems - Pipefitting
<b>Keywords</b>	Shape by removal; engineering drawings; specifications; tools; engineering; construction; Pipework; Installing Pipework components